UNION CARBIDE CORPORATION
Specialty Products Group

(22)

39 Old Ridgebury Road
Danbury, CT 06817 0-1

PLAINTIFF'S EXHIBIT
UC-3715

June 6, 1986

RECEIVED
J. H. BEES

Mr. J.H. Bees
President
Industrial Chemicals
Union Carbide Corporation
39 Old Ridgebury Road
Section P-4
Danbury, CT 06817

I am going to meet with Bagot at 8:30 on 6/20/86 Can you talk to Rick or someone about the problem & solution.
BEP

Dear Mr. Bees:

Warren Anderson has identified the critical issue facing the chemical industry as "public confidence in the safety and integrity of plants and processes". The Environmental Protection Agency has mandated the removal and discontinuation of asbestos use in all U.S. manufacturing facilities to be completed within ten years. It is important for Union Carbide to take a position of leadership in replacing asbestos sealants in all of our manufacturing facilities.

The Specialties Products Group manufactures GRAFOIL® Flexible Graphite for use in both compressive packing and gasketing applications throughout the chemical industry. GRAFOIL® has established a lengthy track record of superior sealing and safety performance in the chemical industry. All major chemical and refining companies are today using GRAFOIL® in an increasingly broad range of gas and fluid sealing applications.

Unfortunately, we have been advised by our own chemical plants that they will continue to use asbestos as long as it is available. This position is harmful to our efforts to expand the use of GRAFOIL® throughout all fluid process industries; Union Carbide is trailing industry standards relative to asbestos replacement.

Union Carbide's present position not to replace asbestos certainly cannot "improve public confidence in the safety and integrity of (our) plants and processes". Your support in rapidly replacing asbestos packing and gasketing with GRAFOIL® fluid sealant products will certainly help to improve sealing performance in our chemical and gas production processes. It will also contribute to Union Carbide's leadership position in terms of public confidence in our commitment to plant and employee safety.

Attached is a copy of the GRAFOIL® Fluid Sealing Brochure. Please take a moment to review it. If your managers want to discuss an application or obtain a GRAFOIL® sealing product, please have them call the GRAFOIL® Sales and Technical Support offices at (800) 822-4322 or (216) 529-3900.

Very truly yours,

W.A. Bagot
Vice President and General Manager
Specialty Products Group

jm

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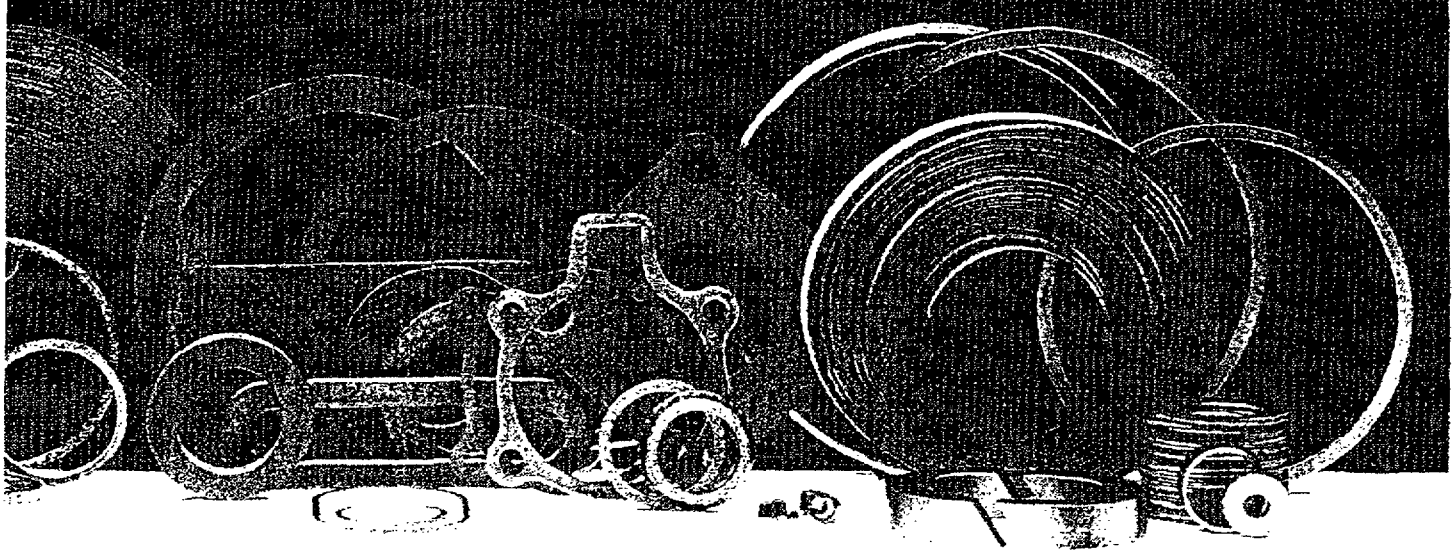
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UNION CARBIDE

GRAFOIL®

Brand Flexible Graphite

The Ultimate in Fluid Sealing Control



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GRAFOIL® — A Tradition of Performance

More than 22 years ago, Union Carbide introduced GRAFOIL® Flexible Graphite. It was the first fluid sealing product made exclusively from pure, natural graphite. GRAFOIL® Flexible Graphite was created by a unique Union Carbide process.

This special material exhibits outstanding fluid sealing characteristics that continue to solve the toughest gasketing and packing problems in industry. Like its forerunner, pyrolytic graphite, GRAFOIL® Brand Flexible Graphite is resistant to heat, has no water of crystallization to lose, is naturally lubricious, chemically inert, and is an excellent conductor of heat.

Unlike manufactured pyrolytic graphite, GRAFOIL® material is flexible, compactible, conformable and resilient. GRAFOIL® Flexible Graphite can be made into an infinite variety of shapes to fit virtually any fluid sealing application.

Once in place, GRAFOIL® Flexible Graphite molds into challenging spaces to fill irregularities and create a superior seal. And it maintains that seal even in harsh environments ranging from cryogenic to superheated; even when exposed to corrosive fluids and gasses.

The first commercially available products were GRAFOIL® Ribbon-Pack and Adhesive Backed Tapes. These products gave plant engineers a superior packing and gasketing material they could easily adapt to solve a range of sealing problems.

As the need for more specific sealing solutions became clear, Union Carbide Research and Development engineers responded with new products. The extent of that response for more than two decades is reflected in the wide range of sealing products in the current GRAFOIL® line. There are a variety of GRAFOIL® Flexible Graphite gasketing, packing, adhesive backed tape, ribbon, roll, sheet, laminate, and injectable products available in a variety of grades designed to meet virtually every industrial fluid sealing need.

Today, a combination of events continues to increase the demand for GRAFOIL® Flexible Graphite products. Technological advances in fluid processing are creating sealing needs that can best be met with GRAFOIL® gaskets and packings. Increased labor costs have made frequent repacking uneconomical. Product safety of asbestos packing and gasketing materials has increasingly come into question. Meanwhile, the cost of GRAFOIL® Brand Flexible Graphite products has steadily decreased over the years.

To fill these expanding needs, Union Carbide R&D engineers are constantly working on new products and production techniques. Our latest advances include new grades of GRAFOIL® Flexible Graphite with even greater corrosion and oxidation resistance, and the ability to fabricate GRAFOIL® laminates with virtually any metal, as well as a wide variety of other materials.

Since pioneering the development of GRAFOIL® Flexible Graphite, Union Carbide has been committed to finding new ways to make this unique product work for fluid processing industries. As time and technology create new problems, Union Carbide will continue to provide users of GRAFOIL® Flexible Graphite with the ultimate control in fluid sealing products.

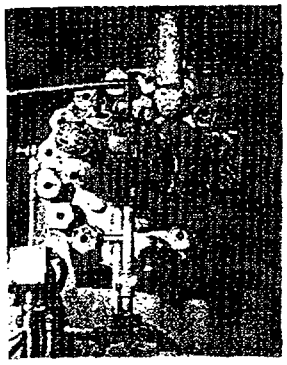






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GRAFOIL® For Maximum Sealability

The key to the success of GRAFOIL® Flexible Graphite is its ability to create and maintain superior seals under conditions ranging from the ordinary to the most demanding. The effectiveness of those seals is a direct result of the inherent qualities of graphite enhanced by the unique Union Carbide process that transforms it into GRAFOIL® Brand Flexible Graphite.

An important example of the flexibility of GRAFOIL® fluid sealing materials is seen in the ease with which they conform to challenging spaces while maintaining their superior resilience. Pits, gouges, and even microscopic irregularities are filled under only moderate bolt loads to create leak-tight seals reducing the need for costly surface finishing.

Gasket creep relaxation — defined as the continued plastic flow of a sealing material with resultant loss of load — is a common problem with other gasketing materials. Not so with gaskets made of GRAFOIL® Flexible Graphite. While maintaining an effective seal, the GRAFOIL® material exhibits virtually no gasket creep relaxation. As a result, the need for periodic bolt tightening is greatly reduced.

For dynamic applications such as valve and pump packings, GRAFOIL® packings compress to fill available stuffing box space and form leak-free rings. An installed column of GRAFOIL® Packing Rings has no open spaces or interstices for leak path development often found in conventional braided packing sets. In addition, the integrity of the seal is further enhanced by the inherent resilience of GRAFOIL® sealants which remain unchanged by time, temperature, or a wide variety of industrial chemicals. This special combination of properties enables GRAFOIL® Flexible Graphite to create superior seals for applications ranging from precision pipe threads to large valves and flanges.

Extends Equipment Life

Since GRAFOIL® Flexible Graphite is made of natural graphite, it maintains its lubricity in even the most severe applications. The inherent lubricity of graphite is a result of its crystalline structure. Very thin, flat crystals are arranged in a regular pattern and in such a way that they slide easily against each other. This lubricating characteristic enables GRAFOIL® Flexible Graphite to preserve vital sealing surfaces. Other sealing materials rely on added lubricants that leach or squeeze out in service, causing the packings to harden, become brittle, damage the sealing surfaces of pumps, valves, and flanges.

GRAFOIL® Flexible Graphite has such a low coefficient of friction that it is classified as a solid lubricant. Properly installed, this superior packing product virtually eliminates abrasion or mechanical wear of valve stems and pump shafts. The generation of heat produced by a high-speed centrifugal pump is also kept to a minimum, preserving the life of the shaft.

Gaskets and packings made from GRAFOIL® Flexible Graphite are superior conductors of heat. GRAFOIL® packing is up to forty times more effective in carrying damaging heat away from rotating shafts than other packing materials. This thermal conductivity is direction-dependent and can be used to conduct frictional and process heat away from the heat source, contributing to increased equipment life.

GRAFOIL® Flexible Graphite also protects flange surfaces. Rapid heat transfer to a gasket's outer edge guards against hot spots that typically cause damage. The thermal conductivity of a GRAFOIL® gasket is markedly higher than that exhibited by a gasket made of elastomeric bonded materials. In addition, the GRAFOIL® material does not vulcanize. Residual material is easily removed without damaging flange faces.

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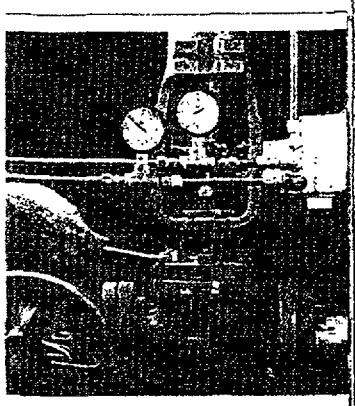
Reducing Operating Costs Through Increased Uptime

arly in its development. GRAFOIL® Flexible Graphite was considered too costly for all but the most challenging fluid sealing problems. That has changed. The actual cost of GRAFOIL® sealing products has been reduced through the use of advanced production techniques.

Initial price, however, is only one factor when determining the value of sealing materials. Because most conventional sealing products have properties that limit their use, they fail prematurely in hostile environments. Asbestos rapidly loses its water of crystallization as temperature increases. Nearly all braided packings (asbestos, fiberglass, aramids, etc.) lose the added lubricant necessary to maintain their flexibility. They dry out, harden, and become abrasive, causing damage to a valve stem, pump shaft, or other contacted surfaces. Abrasion of sealed surfaces can be hastened when fluid handling equipment is insulated, preventing heat from escaping and increasing interior thermal stress. GRAFOIL® packings and gaskets have no added lubricants, binders or filler materials to leach out. Therefore seals created with GRAFOIL® last almost indefinitely in virtually any fluid sealing application.

Because packings and gaskets made with GRAFOIL® Flexible Graphite fill so many fluid sealing needs, the cost of maintaining a large inventory of different materials is greatly reduced. Additionally, the natural lubricity and resilience of GRAFOIL® Flexible Graphite also contribute to cost savings by giving these materials an infinite shelf life.

Since graphite is highly resistant to thermal shock, even extreme temperatures do not present a problem to GRAFOIL® products. Gaskets and packings remain resilient and flexible in neutral or reducing atmospheres ranging from −400°F to well over +3000°F. Effective sealing characteristics are maintained, preventing the loss of costly process fluids. These superior sealing characteristics result in further savings by minimizing the number of gland or flange adjustments required during the long service life of GRAFOIL® gaskets and packings.





One Material Shaped To Your Fluid Sealing Needs

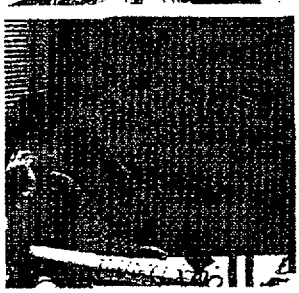
RAFOIL® Flexible Graphite can be calendered, corrugated, wrapped, injected or molded into a complete range of shapes and densities to fit virtually any fluid sealing need. Union Carbide engineers have taken advantage of the exceptional flexibility inherent in this unique product to create an impressive selection of preformed gasketing and packing products.

In addition, GRAFOIL® Flexible Graphite is available in a variety of sheet, self-adhering tapes, and Ribbon-Pack products that may be customized by Union Carbide, by authorized manufacturing distributors of GRAFOIL® fluid sealing products, or even by your own maintenance engineers.

This flexibility, combined with the unique sealing characteristics of GRAFOIL® Flexible Graphite, has made it the product of choice in virtually every industry with fluid sealing needs. In both packing and gasketing applications it has become the specified material in such critical areas as nuclear steam generation, chemical production, cryogenics and petroleum refining.

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Enhanced Plant Safety

Recent revelations about the health hazards of asbestos and the increasing strains placed on gaskets and packings by modern technology have made safety a prime consideration when selecting material.

Because of its special characteristics, GRAFOIL® Flexible Graphite has long been considered one of the safest materials for nearly all fluid sealing applications. Its proven ability to maintain a tight seal in the harshest environments greatly reduces the chance of exposing workers to toxic or super-heated fluids. In addition, GRAFOIL® sealing products have been proven fire-safe in the presence of highly volatile fluids and extremely high temperatures. And, unlike asbestos, GRAFOIL® Flexible Graphite poses no inherent threat to the safety of workers. Because it remains stable under exposure to hazardous nuclear radiation, gaskets and packings made from GRAFOIL® Flexible Graphite have been accepted for use in the primary steam loop of nuclear power plants. Premium (nuclear) grades of GRAFOIL® fluid sealants are certified to meet the most demanding specifications in today's nuclear powered steam plants.

GRAFOIL® Flexible Graphite — Backed By A Commitment

When Union Carbide introduced GRAFOIL® Flexible Graphite over twenty years ago, we made a commitment to fluid sealing. That commitment continues today and is evident in three areas: product development, product quality, and customer service.

Union Carbide Research and Development engineers have steadily expanded and improved the product line since it was introduced. Today, there is a grade and configuration of GRAFOIL® Flexible Graphite to meet almost any fluid sealing requirement. And new products are being developed by our Advanced Technology Group to meet tomorrow's critical needs.

The knowledge that comes with experience is available to GRAFOIL® Flexible Graphite customers through qualified Customer Service Engineers. Whatever the sealing problem, they are on call nationwide to make application recommendations providing solutions to fluid sealing problems.

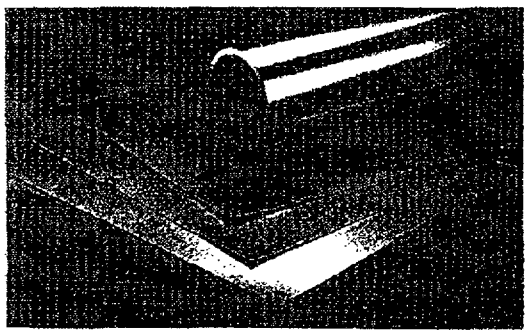
Quality, technology, and service are the foundation of Union Carbide's commitment to both the GRAFOIL® Flexible Graphite product line and to the customers it serves

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A GRAFOIL® Fluid Sealing Product Designed To Meet Your Needs.

Over twenty years of product development have resulted in a selection of GRAFOIL® products that cover the spectrum of fluid sealing applications. The following is a brief description of some of those products.

Sheet and Roll Products



For the ultimate in custom gaskets, GRAFOIL® Flexible Sheets give maintenance engineers the ability to design and shape gaskets to fit virtually any need. Because of its flexibility, GRAFOIL® sheet can be cut and bonded into almost any shape. It provides greater on-site design latitude, reduces gasket inventories, and minimizes installation downtime.

In addition to being a source for custom gaskets, GRAFOIL® sheet is the basic material from which all other GRAFOIL® Flexible Graphite products are fabricated. Four distinct grades have been developed to cover virtually every industrial need.

Grade GTB exhibits all of the superior fluid sealing characteristics associated with GRAFOIL® Flexible Graphite. It is the grade used in most standard industrial applications. Grade GTA is a premium grade developed for use in nuclear applications. It is certified to meet the most rigorous purity specifications of the nuclear industry, including General Electric SIL 393 (D50YP12).

Two grades of corrosion and oxidation resistant GRAFOIL® sheet are available. Grade GTK is recommended for most industrial applications and Grade GTJ is designed for the stringent requirements of the nuclear industry. A special Union Carbide process introduces a non-metallic, inorganic passivating inhibitor into the manufacturing process. GRAFOIL® sheet made by this process is uniformly corrosion inhibiting and oxidation resistant. It reduces stainless steel pitting and is more resistant to oxidation at elevated temperatures.

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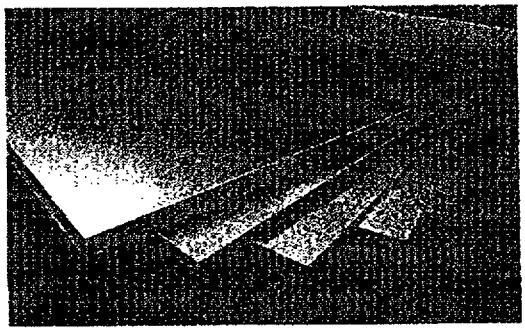
Standard GRAFOIL® Flexible Graphite monolithic sheets are available in thicknesses ranging from 0.005" to 0.030", in widths up to 39.4 inches (one meter), and in roll lengths up to 324 feet. Sheet and rolls can be provided with adhesive backing in the same sizes as monolithic GRAFOIL® Flexible Graphite.

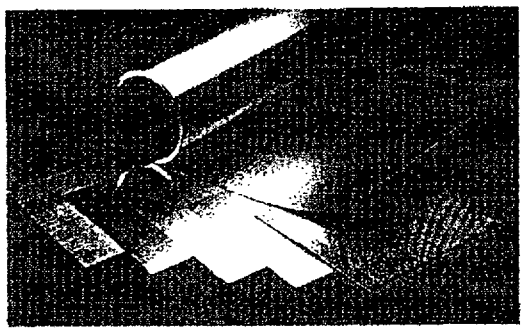
Laminates

Union Carbide engineers have developed a wide range of GRAFOIL® laminates that fill the gasketing needs for all types of industrial applications. These laminates consist of two types.

Laminates constructed exclusively of layers of GRAFOIL® sheet are made to virtually any desired thickness. These laminates are easy to cut by hand and are ideal where enhanced heat dissipation is a requirement.

When extra rigidity and tensile strength are required, GRAFOIL® sheet is laminated with a variety of metals to provide additional mechanical strength and handling ease.

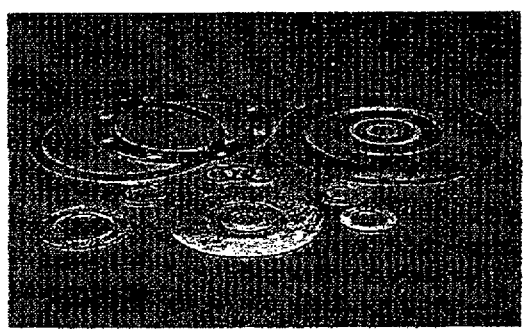




Gaskets

GRAFOIL® Gaskets manufactured from sheet or roll products will compact under only moderate bolt loads to fill even microscopic irregularities in nearly every fluid sealing application. Small surface irregularities are more easily filled under lighter bolt loads, thus reducing the need for costly surface refinishing. Since there is negligible cold flow or creep, the need for periodic precision bolt tightening is significantly reduced. A wide range of gasket thicknesses can be produced by laminating several layers of GRAFOIL® Flexible Graphite sheet to meet specific application needs. Adhesive backed gaskets are also available.

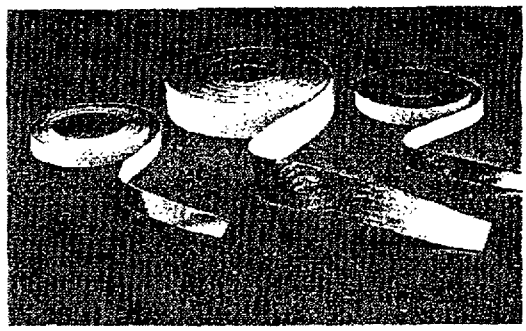
GRAFOIL® Universal Crinkle Gasket Tape can be used on the job site to form gaskets as small as three inches in diameter. For large applications over eighteen inches in diameter, GRAFOIL® Plain Tape is available. Both are also ideal for emergency repair of leaking flanges. And they reduce inventory costs by eliminating the need to stock a large assortment of cut gaskets.



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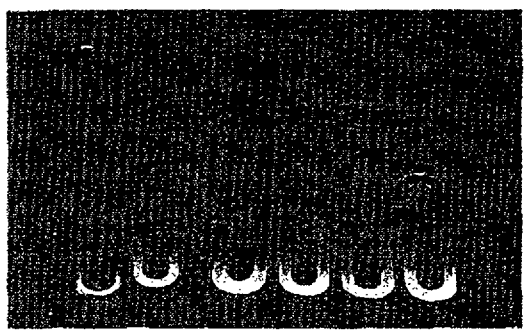
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GRAFOIL® Thread Sealant Tape is completely flexible, snugs easily into intimate contact with pipe threads and produces a leak-tight, temperature stable joint. GRAFOIL® Tape retains resilience and sealing characteristics during temperature cycling. Joints sealed with it can often be remade many times without retaping. GRAFOIL® Premium Grade Sealant Tape for nuclear applications is certified to contain less than 100 ppm leachable chlorides.



For applications where exceptional compressive load carrying ability and improved handleability are required, GRAFOIL® Reinforced Gaskets are designed to withstand the high pressures found in industrial applications. These laminates combine multiple layers of GRAFOIL® Sheet with inserts of stainless steel, aluminum, carbon steel, or stainless steel mesh.

GRAFOIL® Boiler Water Level Gauge Gaskets are field-proven to deliver long life and leak-free performance. They remain resilient after thermal cycling at boiler temperatures, exhibiting no hardening or decomposition from age or exposure to steam. The thermal and physical characteristics of GRAFOIL® Gaskets virtually eliminate glass cracking and offer leak-free performance.

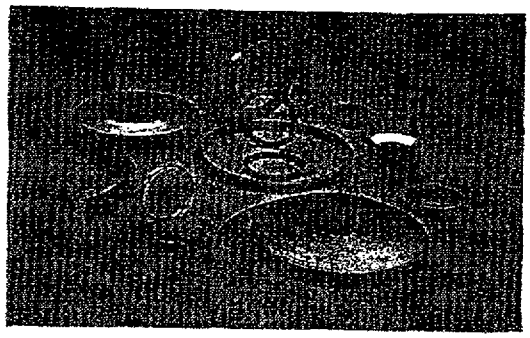


Spiral-wound and heat exchanger gaskets made with GRAFOIL® Flexible Graphite have exhibited significant sealing superiority over asbestos, mica paper and other filler materials used in critical fluid sealing applications. GRAFOIL® Flexible Graphite has been approved to meet API 601 and other API valve standards. It also provides exceptional sealing performance when fabricated into a wide variety of shapes for heat exchanger gasketing applications. The natural resilience of GRAFOIL® Flexible Graphite ensures leak-tight performance while affording an environmentally safe alternative to asbestos.

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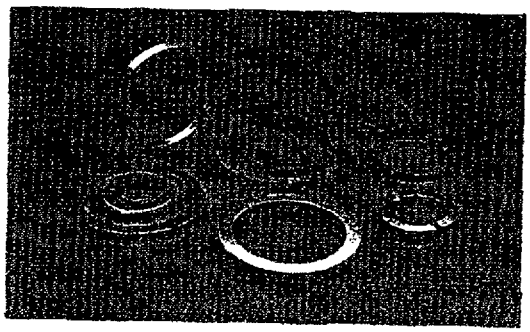
Packings

Ribbon-Pack made from corrugated GRAFOIL® Flexible Graphite is a versatile product with universal application. It is designed to provide the user with the flexibility to form all graphite endless rings for any size pump or valve stuffing box. With GRAFOIL® Ribbon-Pack, leak-tight stuffing box seals can be achieved in place, significantly reducing production downtime. Because of its application flexibility, large inventories of packing products in varying sizes and shapes can be substantially reduced.



Once installed the natural lubricity and resilience of GRAFOIL® Ribbon-Pack reduces the need for periodic repacking. The only service that may be required is the simple task of adding another section of GRAFOIL® Ribbon-Pack.

Fabricated from Ribbon-Pack, GRAFOIL® Die Molded Packing Rings are predensified for ease of installation. They are precision sized to fit the dimension tolerances of valve and pump stuffing boxes and require minimum run-in. GRAFOIL® Die Molded Rings create leak-tight seals with only ⅛ to ½ of the gland pressure required by other packings. Their inherent natural lubricity results in long term sealing performance that is far superior to that achieved with conventional braided packings.



GRAFOIL® Laminated Packing Rings are fabricated from GRAFOIL® Laminated Sheets. Installed, the laminated layers of each ring are perpendicular to the stem or shaft and take full advantage of the direction-dependent thermal conductivity of GRAFOIL® Flexible Graphite. This product significantly increases stem life in valves and shaft life in pumps used where heat dissipation is critical.

For nuclear applications GRAFOIL® high purity Laminated Packing Rings are subjected to a unique high temperature process that ensures a leachable chloride content of less than 50 parts per million. Because

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of their excellent resistance to nuclear radiation, long life, and leak-free performance, GRAFOIL® Laminated Packing Rings have been selected as the viable replacement for all asbestos packing in nuclear fueled steam generating plants.

GRAFOIL® Injectable Packing is an exclusive sealant product comprised of GRAFOIL® Flexible Graphite and a proprietary carrier. When injected into the stuffing box of a pump, valve, expansion joint, etc., it forms a mechanical packing that fills all crevices and creates a superior seal.

Because of its resistance to heat and corrosion, the GRAFOIL® Injectable Packing provides an effective seal for long periods of time, and outperforms conventional fillers in high temperature applications.



GRAFOIL® Brand Gasketing and Packing Products

GRAFOIL® Gasketing and Packing Products are fabricated from pure graphite. They do not contain binders or fillers which limit the performance and application range of most other sealing products. In some cases, GRAFOIL® Gasketing and Packing are the only materials which have withstood severe service demands. The Quick Reference Grade Guide describes the wide range of GRAFOIL® Flexible Graphite Grades available to meet virtually any fluid sealing need.

GRAFOIL® Brand Flexible Graphite

GRAFOIL® Brand Flexible Graphite has all the characteristics needed for long life performance, even under the most severe conditions. The product is in a class by itself when considering thermal stability and thermal conductivity. Its flexibility permits easy fabrication and application; conformability and resilience contribute to permanent, leak-free sealing. Typical GRAFOIL® properties are described on the following page.

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GRAFOIL® FLEXIBLE GRAPHITE
QUICK REFERENCE GRADE GUIDE

GRADES	DESCRIPTION
	MONOLITHIC SHEET AND ROLL
GTA	Premium (Nuclear) Grade 99.5% graphite minimum. 50 PPM leachable chloride maximum. No binders or resins
GTJ	Grade GTA based sheet, with an inorganic passivating inhibitor for corrosion and oxidation resistance. No binders or resins.
GTB	Standard Industrial Grade. 95.0% graphite minimum. 100 PPM leachable chloride maximum. No binders or resins
GTK	Grade GTB based sheet with an inorganic passivating inhibitor for corrosion and oxidation resistance. No binders or resins
	ALL GRAFOIL® LAMINATES
GHA	Cured laminate sheet made from Premium (Nuclear) Grade GTA sheet. Adhesive is carbonized and degassed.
GHB	Cured laminate sheet made from Standard Industrial Grade GTB sheet. Adhesive is carbonized and degassed.
GHL	Uncured laminate made from Standard Industrial Grade GTB sheet. Adhesive bond.
	METAL REINFORCED GRAFOIL® LAMINATES
GHE	316 stainless steel tang inserted laminate. Standard Industrial Grade GTB sheets mechanically bonded to tang sheet insert.
GHR	Uncured laminate with flat 316 stainless steel insert (.002" thick). Made from Standard Industrial Grade GTB sheet. Adhesive bond.
GHS	Uncured laminate with stainless steel wire mesh screen insert (24 wire/inch; .0075" thick). Made from Standard Industrial Grade GTB sheet. Adhesive bond.

GRADES	DESCRIPTION
	METAL REINFORCED GRAFOIL® LAMINATES (cont.)
GHG	Uncured laminate with flat low carbon steel insert (.002" thick). Made from Standard Industrial Grade GTB sheet. Adhesive bond.
GHQ	Uncured laminate with flat aluminum insert (.005" thick). Made from Standard Industrial Grade GTB sheet. Adhesive bond.
	GRAFOIL® RIBBON-PACK
GTR	Slit and corrugated from Premium (Nuclear) Grade GTA sheet. Certified to contain less than 50 PPM leachable chlorides.
GTJ	Slit and corrugated from Premium (Nuclear) corrosion and oxidation inhibiting Grade GTJ sheet. Certified to contain less than 50 PPM leachable chlorides.
GTZ	Slit and corrugated from Standard Industrial Grade GTB sheet. 100 PPM leachable chloride maximum.
GTK	Slit and corrugated from Standard Industrial corrosion and oxidation inhibiting Grade GTK sheet. 100 PPM leachable chloride maximum.
	GRAFOIL® ADHESIVE BACKED SHEET, GASKET AND THREAD SEALANT TAPE
GTF	Fabricated from Premium (Nuclear) Grade GTA sheet. 100 PPM leachable chloride maximum.
GTH	Fabricated from Standard Industrial Grade GTB sheet.

TYPICAL GRAFOIL® PROPERTIES

PROPERTIES	ENGLISH	METRIC
TYPICAL MATERIAL PROPERTIES		
Density	70lb/ft³	1.1gm/cc
Leachable Chloride Content-Maximum		
Industrial Grades	100 ppm	
Premium (Nuclear) Grades	50 ppm	
Carbon Content-Minimum		
Industrial Grades	95.0%	
Premium (Nuclear) Grades	99.5%	
Compressibility (ASTM F-36)	40%	
Recovery (ASTM F-36)	20%	
Creep Relaxation (ASTM F-38)	5%	
Sealability (ASTM F-37)	0.5 ml/hr	
TYPICAL PHYSICAL PROPERTIES		
Tensile Strength Along Length & Width	750 psi	5.2 MPa
Coefficient of Friction against Steel		
@ 4 psi (.03 MPa)	.018	
@ 8 psi (.07 MPa)	.053	
@ 12 psi (.08 MPa)	.157	

PROPERTIES	ENGLISH	METRIC
TYPICAL THERMAL PROPERTIES		
Functional/Temperature Range		
Neutral or Reducing Atmosphere	–400 to 6400° F	–200 to 3000° C
Oxidizing Atmosphere		
Standard Grades	–400 to 850° F*	–200 to 450° C*
Oxidation Resistant Grades	–400 to 975° F*	–200 to 525° C*
Thermal Conductivity		
Along Length & Width	960BTU-in/ft²-H-°F	140W/M-K
Through Thickness	36BTU-in/ft²-H-°F	5W/M-K

*The fluid temperature in an oxidizing atmosphere may considerably exceed the indicated temperature without oxidation of the GRAFOIL® providing that the bulk temperature of the GRAFOIL® gasket is below these temperatures or that the fluid being handled does not come into direct contact with the graphite. EXAMPLE: a metal spiral-wound gasket with a GRAFOIL® filler material.

****NUCLEAR RADIATION RESISTANCE**

EXPOSURE LEVELS	RESULTS
† 5.5 X 10^{20} NVT @ 1000° C	No Apparent Effect
1.5 X 10^{9} RADS Gamma Radiation (1.5 X 10^{11} ERGS/GRAM)	No Apparent Effect

** Source: Oak Ridge National Laboratory (1978)

† Integrated Neutron Flux:
N = Neutrons Per CC, V = cm/sec
T = Seconds

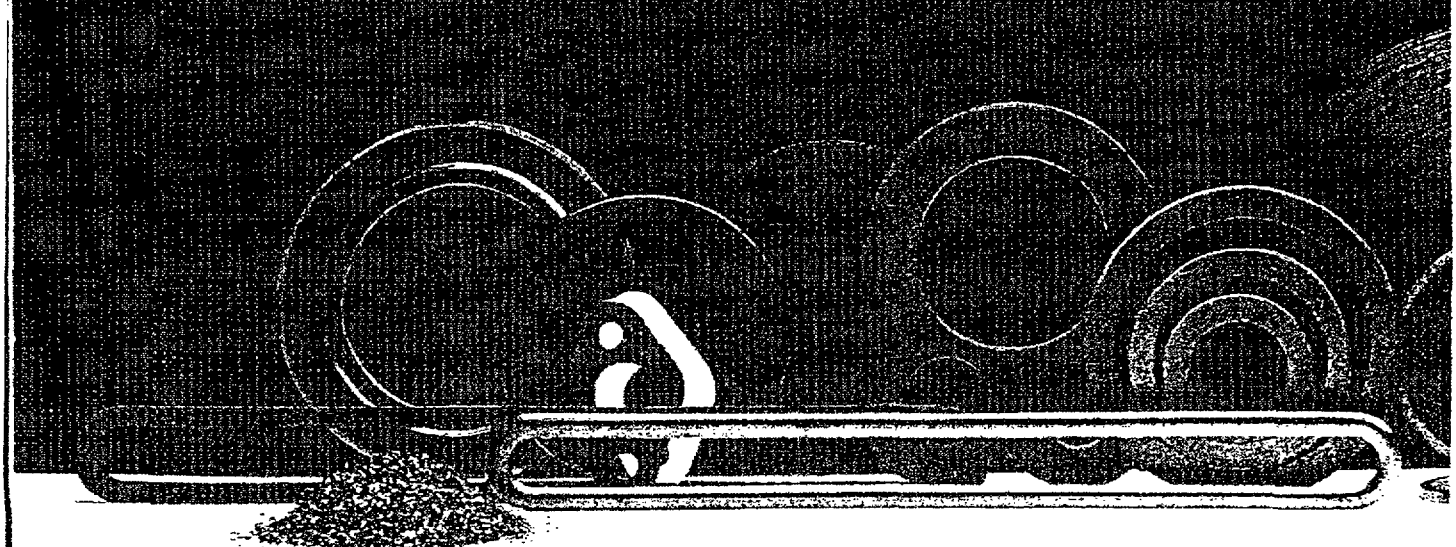
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We welcome your inquiries and invite you to discuss your fluid sealing needs and problems with us or any authorized manufacturing distributor of GRAFOIL™ fluid sealing products. Applications specialists will be happy to provide you with whatever assistance you need to help lower your operating costs and give you the performance you demand. Write or call today for complete information.

UNION CARBIDE

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